Communication Access Options
For Students who are Deaf, Hard of Hearing or Deaf-blind

1.) Assistive Listening Devices

When students use assistive listening devices (ALDs) such as FM systems, conference and boom mikes or infrared systems, the volume of the speaker’s voice is increased, while background noise is diminished.

Issues to consider:

- Classroom scheduling
- The mobility of ALDs (e.g. infrared systems)
- Compatibility with the student’s hearing aides
- Requirements (and ability) of the student to express themselves in class
- Access to technical support for equipment
- Instructors must restate any questions from the class when FM systems are not wireless
- Useful for small group work
- New technology can diminish background noise and amplify the speaker’s voice in larger lecture theatres benefiting all students

2.) Interpreting

Interpreting provides communication access between deaf and hearing people who do not share the same language. Within post secondary settings in BC ASL and oral interpreting services are supported by Provincial Guidelines. Please do not hesitate to contact PCAS if you have questions regarding the qualifications of service providers, hiring processes, or pay scales.

Issues to consider:

- Student’s language (ASL, contact sign, English)
- Class format (lecture, lab, seminar, meeting)
- Scheduling, length of class, complexity, interpreter’s experience.
3.) **Speech to Text Accommodations**

   **a.) Computer note taking (40-80wpm)**

   Instructors generally speak at 170-220 words per minute. Computer note taking is adequate only for a summary of the lecture content. Notes generally do not include who is speaking, comments or asides that are made, questions from other students, etc.

   **b.) Transcribing (80-120 wpm)**

   TypeWell is faster than electronic note-taking using spelling abbreviations and summary notes, environmental cues (meaning for meaning vs. word for word). The transcriber uses a laptop computer and student views the expanded text on his or her own laptop. The computer program automatically expands the abbreviations. Depending on the speed of the service provider and rate of the speaker, transcripts resemble real-time transcripts indicating changes in speakers, and meaning-for-meaning content presented (as opposed to word-for-word) in real time. Interpreters who are cross-trained in TypeWell can “voice” for the student effectively, understand cultural issues, and ethics related to working in a higher education classroom etc. For further information on TypeWell transcriber recruitment and training, as well as Guidelines for working in post-secondary settings and a suggested pay scale, as well as Orientation manuals for students, service providers, and DSS coordinators please access the PCAS website.

   **Issues to consider:**

   - Does not provide social cues such as timing when to interrupt or ask a question by identifying when the speaker has completed his thought
   - May pose challenges in group work, math and science courses
   - TypeWell requires a short software/transcriber training course which is available online at [www.TypeWell.com](http://www.TypeWell.com) However, service providers will also require an orientation to your particular post-secondary setting
   - The transcriber must support classroom participation by voicing students’ comments effectively.

   **c.) CART/Real Time Captioning**

   CART or Real-time Captioning provides the student with a word for word transcript using steno equipment and specialized software. Students receive a verbatim transcript. The service provider provides all equipment and software.
Issues to consider:

- Dense, high volume notes
- Verbal communication (e.g. tone of voice, volume, pace, body language and facial expression) is not included in transcripts
- The quality of the transcript depends on speed and accuracy of the service provider
- Vocabulary must be pre-programmed in system dictionary
- Can the captioner provide effective “voicing” so that the student can participate in class?
- Expensive per hour costs ($90 to $110 per hour).

4.) Voice Recognition

Automatic Speech Recognition (ASR) includes programs such as Dragon Dictate. This approach holds potential as a means to provide communication access for students with hearing loss. However, this form of service is currently in the research stage in BC.

Voice recognition works best when:

- The classroom has good acoustics – level of background noise is less
- Vocabulary is not new or complex
- The environment is consistent
- The instructor or service provider is not fatigued or excited as the system won’t recognize voice
- The system is sensitive e.g. if the instructor or service provider laughs or coughs, words might appear
- Requires a high quality microphone and computer. Power is required to match software and any word processing systems required.

Issues to consider:

- Takes time for the instructor to train the program, however, this has become a much more seamless process than in the past
- There may be faculty resistant to the time required to program the system
- Errors due to word recognition have decreased but could cause concern in an academic environment
- Instructors must restate questions and comments from other students
- Limited utility in group settings
- Dense, high volume notes
• Need to consider “voicing”, Can the student participate?
• System expense up-front, minimal ongoing costs.

5.) Remote Services

Remote services can offer support through phone and IP (computer) lines to areas where it is traditionally difficult to provide direct service. Communication is facilitated by the instructor’s use of a microphone and an off site service provider converts speech through ASL or oral interpreting; while a transcriber or captioner converts speech to text.

a.) Remote Interpreting – requires a laptop for the student, a web cam (possibly two – one for overheads or multimedia, one for the student to communicate with the interpreter), a microphone for the instructor and a high-speed internet line. Speakers are required so the interpreter can “voice” student’s comments, depending on student’s communication mode; a screen that is easy to read is also required (if too large then picture is blurry, and if too small there is not enough detail).

Issues to consider:

• The depth (3D aspect) of signs is eliminated when watched on screen
• Finger spelling, often utilized in an academic setting is difficult to receive
• A time lag may be created as interpreter may need to slow production
• Adequate lighting on the interpreter and student is critical
• A remote interpreter may not be able to ask for clarification
• Consider “voicing”, can student participate?
• Expensive per hour costs but minimal set up costs.

b.) Remote Captioning – requires a laptop for the student, a phone line “out” and an internet line “in” with Internet Explorer/Netscape with an accessible port to circumnavigate firewall protection. It may also require a web cam to provide visual support for overheads or other multimedia. The use of directional microphones may eliminate the need for a telephone link.

Issues to consider:

• Difficult with multiple speakers in a large setting (must speak into mike)
• Complex set up when lots of visuals are used (web cam needed)
• Classroom booking (must have a phone line/internet access)
• Requires good acoustics
Summary

For all of the options listed, it is important to remember that there is more to communication than just the word. Meaning that is added to verbal communication such as tone of voice, body language and facial expression might be lacking, as are some of the social cues such as knowing when to interrupt or ask a question by identifying when the speaker has completed his/her thoughts. Training for the student and awareness training for the faculty and other students in the classroom may play a large part in the success of these options providing qualitative educational access.

For further information:

- TypeWell
- Realtime Transcription
- Alliance for Technology Access